

REMARKS

Further to the Advisory Action mailed on September 14, 2006, this Amendment accompanies a Request for Continued Examination (RCE) being filed to continue prosecution of the application. Claims 53, 55, 75 and 81 have been amended. No new matter has been added. Reconsideration of the application is respectfully requested.

The Final Rejection mailed on May 31, 2006, primarily relied on the argument that the pending claims recite "intended use limitations" to reject the claims. Although Applicants disagree with this characterization, independent claims 53, 75 and 81 have been amended to further emphasize the structural features of the claimed invention. Moreover, as a matter of law, "statements of intended use ... may ... limit apparatus claims ... if the applicant clearly and unmistakably relied on those uses ... to distinguish prior art." Catalina Marketing Int'l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 809, 62 U.S.P.Q.2d 1781 (Fed. Cir. 2002). This is the case here, because Applicants are relying on all of the claim limitations, including those deemed "intended use" by the Office Action, to distinguish over the prior art which fails to teach or suggest claim limitations.

In the Final Rejection mailed on May 31, 2006, claims 53-61, 63 and 75-86 were rejected under 35 U.S.C. 102 as being anticipated by Collins et al., U.S. Patent No. 5,888,414 ("Collins"). Reconsideration is respectfully requested for the following reasons.

Independent claim 53 has been amended to recite an apparatus comprising a "plasma etching chamber for conducting a plasma etch and comprising an electrode for applying a DC bias voltage to a supported substrate and a coil for generating an RF

field." Claim 53 further recites a "radio frequency supply source for applying and RF voltage to said coil to generate a plasma within said chamber."

Claim 53 also recites a "bias voltage modulator for applying a modulated DC bias voltage to one of said supply source and said bias voltage which varies between a first voltage and a second voltage, said first voltage being at a level which ensures material to be deposited onto a first location of a substrate supported by said electrode while a second location of said substrate is etched, and at said second voltage being at a level at which both first and second locations of said substrate are etched." Claims 54-61 depend from claim 53.

Independent claim 75 has been amended to recite an "an etching chamber having an electrode for supporting a substrate having an opening, and a coil for generating an RF field; and a bias voltage modulator adapted for modulating one of a DC bias voltage of said electrode and a voltage for generating said RF field between a first voltage and a second voltage while processing the substrate." According to claim 75, the "modulator is configured to modulate the voltage such that material is deposited at a first position of said opening which has a first aspect ratio, while a second position of said opening having a second aspect ratio, different from said first aspect ratio, is etched." Claims 76-80 depend from claim 75.

Claim 81 has been amended to recite an "etching chamber having an electrode for supporting a substrate; and a bias voltage modulator for modulating a DC bias voltage of said electrode between a first voltage and a second voltage while etching a self-aligned contact opening in the substrate." According to claim 81, the "voltage modulator is adapted to control deposition of material at a first position of said opening which has a first aspect ratio, while etching a second position of said opening which has a second aspect ratio." Claims 82-86 depend from claim 81.

Collins fails to teach or suggest the limitations of independent claims 53, 75 and 81. The Office Action previously asserted that:

Regarding the newly added limitation of etching rate and deposition rate and deposition rate being different on different location (depends upon aspect ratio), this is an intended use (functional limitation) of the structural facilities provided by the apparatus disclosed by Collins et al. Claimed process is however known from the prior art as discussed below. Further, as discussed earlier, operating parameters claimed are intended use limitations, the apparatus is disclosed capable of supporting.

Office Action, pp. 2-3.

Applicants disagree with the assertion that the “operating parameters claimed are intended use limitations.” Regardless of how the Office Action characterizes the limitations, the limitations are structural limitations on the related bias voltage modulator. It must produce two output voltages which are capable of providing the results claimed. Applicants are relying on these limitations of the bias voltage modulator to distinguish over prior art. Thus, even if the Office Action considers that the “operating parameters claimed are intended use limitations, rather than the structural limitations which they are,” such limitations must be considered when evaluating the claims because “statements of intended use ... may ... limit apparatus claims ... if the applicant clearly and unmistakably relied on those uses ... to distinguish prior art.” Catalina Marketing Int’l, Inc. v. Coolsavings.com, Inc., 289 F.3d 801, 809, 62 U.S.P.Q.2d 1781 (Fed. Cir. 2002).

Moreover, as noted, the above-recited limitations are not “structural facilities provided by the apparatus disclosed by Collins et al.” Although the Office Action asserts that the “[c]laimed process is however known from the prior art,” such a showing has never been made by any Office Action. The Office Action has yet to respond to this argument previously presented by Applicants. Collins does not teach,

suggest or contemplate the above-recited limitations on the bias voltage modulator. The claims recite an "apparatus" having a "bias voltage modulator" that is structurally configured to perform a specific function that is neither disclosed nor suggested in the prior art. To anticipate such a structure the Office Action must provide a reference that has a structure configured to perform in the manner claimed.

Claims 53-61, 63 and 75-86 recite structures that are neither taught nor suggested by Collins, and the Office Action provides no support to the contrary. Thus, 53-61, 63 and 75-86 are allowable over Collins.

In the Final Rejection mailed on May 31, 2006, claims 53-61, 63 and 75-86 were rejected under 35 U.S.C. 102(e) as being anticipated by Hopkins et al., U.S. Patent No. 6,187,685 ("Hopkins"). This rejection is traversed.

The Office Action relied on "Col 10, lines 21-52 and Col 12, lines 54-67" of Hopkins for teaching "the application of bias voltage modulation for ARDE (Aspect Ratio Dependent Etching) and ... etching of high aspect ration [sic] by alternatively etching and depositing." Office Action, p. 3. The Office Action itself points out why Hopkins fails to teach or suggest the claimed invention by stating the Hopkins teaches "alternatively etching and depositing."

To the contrary, claim 53 recites a modulator wherein at a first voltage material is deposited onto a first location "while" a second location is etched. Claim 75 recites a modulator wherein "material is deposited at a first position of said opening which has a first aspect ratio, while a second position of said opening having a second aspect ratio, different from said first aspect ratio, is etched." Claim 81 recites a modulator that deposits material at a first position of an opening which has a first aspect ratio, "while" etching a second position of said opening which has a second

aspect ratio." Moreover, Hopkins fails to teach or suggest the different aspect ratios recited in the claims. These arguments have yet to be addressed in any Office Action.

Thus, Hopkins fails to teach or suggest the limitations recited by independent claims 53, 75 and 81. Claims 53, 75 and 81 and claims dependent therefrom are allowable over Hopkins.

In the Final Rejection mailed on May 31, 2006, claim 62 was rejected under 35 U.S.C. § 103 as being unpatentable over Collins in view of Hashimoto et al., U.S. Patent No. 5,779,925 ("Hashimoto"). Claim 62 depends from claim 53 which is allowable over Collins as discussed above. Hashimoto adds nothing to Collins to remedy its deficiencies with respect to claim 53. Thus, claim 62 is allowable together with its base claim.

In view of the above amendments and remarks, Applicants believe that the pending application is in condition for allowance.

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Respectfully submitted,

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